Impact of structured intervention on knowledge, awareness and practices of pregnant and lactating rural women

Synopsis

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in

HOME SCIENCE

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1.0 Introduction

All pregnancies are at risk even though most of the pregnancies and childbirth worldwide are uneventful. Almost 15% of all the pregnant women can develop potentially life-threatening complications which might require skilled care with some requiring major intervention for survival. Complications can occur anytime during the course of the pregnancy and childbirth, which in turn can affect the health and the overall survival of mother and the fetus. More than 150 million women become pregnant in developing countries each year and an estimated five lakh of them die from pregnancy-related causes. Maternal health problems are also the causes for more than seven million pregnancies to result in stillbirths or infant deaths within the first week of life. Maternal death of a woman in reproductive age has a further impact by causing grave economic and social hardship for her family and community. Other than their health problems most women in the developing countries lack access to modern health care services and increase the magnitude of death from preventable problems reported by **World Health Organization (2020).**

The **World Health Organization** has reported that almost 830 women die daily as a result of complications during antenatal period and childbirth. There are five main reasons for death of pregnant women such as severe hemorrhage, maternal infections, unsafe abortion, hypertension-related disorders of pregnancy such as preeclampsia and eclampsia, and medical complications such as cardiac conditions, HIV/AIDS, or diabetes complicating or complicated by pregnancy.

According to **Government of India (2018)** defined as "The number of maternal deaths per one lakh live births due to causes related to pregnancy or within 42 days of termination of pregnancy, regardless of the site or duration of pregnancy. "Also, children born with poor immunity are more likely to die from common childhood ailments as diarrheal and respiratory diseases. In addition, children who survive such ailments may be locked into a vicious cycle of recurring sickness and abnormal growth, often with irreversible damage to their mental and social development. The primary reasons for the high levels of maternal mortality are directly related to disparities of economic conditions and cultural constraints limiting access to care. However, maternal mortality is not identical pan-India, as urban areas often have lower overall maternal mortality due to the availability of adequate medical resources. Similarly, in states where there are higher literacy and growth rates there

is better maternal health and lower infant mortality reported by **National Health Portal (2018).** According to the **United Nations Population Fund (2017)** report, about every 2 minutes a woman dies because of complications due to child birth or pregnancy. For every woman who dies, there are about 20 to 30 women who experience injury, infection, or other birth or pregnancy related complication.

In order for a society to be healthy and prosperous, its dedication to raising future generations and maintaining the health and well-being of its residents is reflected in the provision of maternal and child healthcare. This comprehensive field of healthcare encompasses a spectrum of services, interventions, and strategies designed to safeguard the health of expectant mothers, infants, children, and adolescents. Stated by **Alkema L, et.al. (2016).** Almost 303,000 women and teenage pregnant women died due to conception and childbirth related complications and fetal loss was nearly 2.6 million in the year 2015. **Casey, C. (2020)** states that Preterm birth (gestational age <37 weeks) has a worldwide prevalence of nearly 11% and 95% of preterm infants who receive modern neonatal and pediatric care now survive into adulthood. However, improved early survival has been accompanied by long-term increased risks of various chronic disorders, prompting investigations to determine whether preterm birth leads to higher mortality risks in adulthood.

According to **Banu (2016)** eating nutritionally balanced foods during pregnancy is very essential. In India, dietary habits of pregnant women are highly influenced by food fads, cultural taboos, customs and religious beliefs. Very minimum data is available on the dietary intake of pregnant and postpartum nutritional practices in India. 89% believed that there is an effect of food on pregnancy and lactation, 11% did not. Despite of high literacy rate (75%) there are certain strong, food beliefs regarding pregnancy and lactation which have been practiced by pregnant ladies and lactating mothers which were affecting their food intake. The definitive steps should be taken to educate women about the importance of healthcare for ensuring viable pregnancies and safe childbirths reported by **Kowsalya & Manoharan (2017).**

1.1 Maternal Health

According to **World Health Organization** Maternal health is the health of women during pregnancy, childbirth, and the postpartum period. In most cases, maternal health encompasses

the health care dimensions of family planning, preconception, prenatal, and postnatal care in order to ensure a positive and fulfilling experience. In other cases, maternal health can reduce maternal morbidity and mortality. Maternal health revolves around the health and wellness of pregnant women, particularly when they are pregnant, at the time they give birth, and during child-raising. **WHO** has indicated that even though motherhood has been considered as a fulfilling natural experience that is emotional to the mother, a high percentage of women develop health problems and sometimes even die. Because of this, there is a need to invest in the health of women. The investment can be achieved in different ways, among the main ones being subsidizing the healthcare cost, education on maternal health, encouraging effective family planning, and ensuring progressive check up on the health of women with children.

1.2 Maternal morbidity and mortality

The **World Health Organization (WHO)** defines maternal death as the death of a pregnant mother due to complications related to pregnancy, underlying conditions worsened by the pregnancy or management of these conditions. This can occur either while they are pregnant or within six weeks of resolution of the pregnancy. Pregnancy associated death, as defined by the **American College of Obstetricians and Gynecologists (ACOG),** are all deaths occurring within one year of a pregnancy resolution. Identification of pregnancy associated deaths is important for deciding whether or not the pregnancy was a direct or indirect contributing cause of the death.

Maternal mortality refers to deaths due to complications from pregnancy or childbirth. From 2000 to 2020, the global maternal mortality ratio (MMR) declined by 34 per cent – from 339 deaths to 223 deaths per 100,000 live births, according to UN inter-agency estimates. This translates into an average annual rate of reduction of 2.1 per cent. While substantive, this is about one third of the 6.4 per cent annual rate needed to achieve the Sustainable Development Goal (SDG) of 70 maternal deaths per 100,000 live births by 2030 reported by **UNICEF (2023**). According to the **United Nations Population Fund (UNFPA) 2017** report, about every 2 minutes a woman dies because of complications due to child birth or pregnancy. For every woman who dies, there are about 20 to 30 women who experience injury, infection, or other birth or pregnancy related complication. The **WHO** divides causes of maternal deaths into two categories- direct obstetric deaths and indirect obstetric

deaths. Direct obstetric deaths are causes of death due to complications of pregnancy, birth or termination. For example, these could range from severe bleeding to obstructed labor, for which there are highly effective interventions. Indirect obstetric deaths are caused by pregnancy interfering or worsening an existing condition, like a heart problem.

1.3 Factors influencing maternal health of rural women

- **Poverty and access to healthcare –** According to **UNFPA** report social and economic status, culture norms and values, and geographic remoteness all increase maternal mortality and the risk for maternal death (during pregnancy and childbirth).Women living in poverty-stricken areas are more likely to be obese and engage in unhealthy behaviors such as cigarette smoking and substance use, are less likely to engage in or even have access to legitimate prenatal care, and are at a significantly higher risk for adverse outcomes for both the mother and child.
- **Low social status of women -** The health and well-being of women is related and highly influenced with their social status. "Poor, Powerless, Pregnant" This is the status of women as labeled by a **Global survey in (1988).** Economic conditions play a significant role in maternal health. Poverty can limit access to quality healthcare, proper nutrition, and safe living environments. Low-income women may face barriers to accessing prenatal care, which can lead to complications during pregnancy and childbirth.
- **Cultural and social norms -** Sociocultural factors can influence maternal health behaviors, including when and how women seek care. Traditional practices, beliefs, and gender roles can either support or hinder maternal health**.**
- **Preexisting health conditions -** Chronic medical conditions, such as diabetes, hypertension, or obesity, can complicate pregnancies and require careful management. Proper management of these conditions before and during pregnancy is essential for maternal health.

2.0 Review of Literature

There are many studies that told about the problems faced by the women of rural areas .Some studies told about the causes , risk factors and health beliefs in the rural areas .While the need for intervention is evident.

Table 2.1 Review of Literature content

Common health problems faced by rural pregnant and lactating women	Causes and risk factors during pregnancy	Health related beliefs during pregnancy and lactation	Intervention program on pregnancy and lactation in rural areas
Zielibska,M. 2017	Chaitra,R. 2018	Singh,V. Et al 2017	Desai,S. Et al 2021
Chakrabarti,S. 2019	Sinha,A. Et al 2020	Bhandari,D. Et al 2019	Utomo,N.K.P Et al 2022
Lowe,M. 2019	Hussain,T. Et al 2020	Chakrabarti,S.Chakrabarti,A 2019	Sabri,S. 2023
Sheha, E. et al. 2020	Mangla,D. Et al 2020	Padmaja, Ravula. Et al 2020	Nabi,S. Et al 2023
Bekyieriya,E. et al. 2023	Mogan, KA. Et al. 2023	Sara,Richards.Et al 2021	N,Mahalakshmi. 2023
Khan,M. 2023	Chandra,Kiran.Et.al 2024	Ahuja,A .Et al 2023	Hemly,A.F. Et al 2023

Table 2.2 Review related to the research

Common health problems faced by rural pregnant and lactating women				
S.No.	**Year**	**Researcher**	**Tittle**	**Major Findings**
1.	2017	Zielibska,M.	Health effects of carotenoids during pregnancy and lactation.	A nutrient with solidified anti-inflammatory, antioxidant, and neuroprotective qualities is carotenoids. The correlations between appropriate intakes of dietary carotenoids or its supplements and decreased risk of certain chronic non-communicable diseases, as well as age-related decline in cognitive abilities, have been validated by data from epidemiological, clinical, and interventional investigations.
2.	2019	Chakrabarti,S.	Food taboos in pregnancy and early lactation among women living in a rural areas of West Bengal.	Though traditional avoidances and dietary restrictions are still practiced, the adherence to taboos is slowly diminishing. There is a need for nutrition education and awareness generation among women and they must be convinced that in the era of advanced treatment and investigation modalities, most of the pregnancy-related complications can be well managed.
3.	2019	Lowe,M.	Social and cultural factors affecting maternal health in rural Gambia.	Pregnant women in rural Gambia often grapple with significant challenges. They bear the weight of heavy workloads, with limited opportunities for rest, and face nearly insurmountable barriers in accessing prenatal care. Within the household, gender roles dictate that women frequently engage in non-remunerative fieldwork, with scant economic resources at their disposal**.**
4.	2020	Sheha, E. et al.	Effect of Educational	The educational program improved mothers' knowledge and practices and improved the

			Program on Mother's Knowledge and Practice Regarding Hepatitis C Virus in Rural Areas.	daily life-style which in-turn will reduce the prevalence of hepatitis C virus in the future.
5.	2023	E.Bekyieriya, S.Isang	Mobile health technology in providing maternal health services – Awareness and challenges faced by pregnant women in upper West region of Ghana.	The Savanna Signatures mobile health intervention is widely known but some challenges exist that impede the smooth implementation of the intervention. The mobile health technology intervention implementers should partner with other sectors and policy makers to address the challenges identified by the study.
6.	2023	Khan,M.	The study of healthcare facility utilization problems faced by pregnant women in urban north India.	The tremendous increase in the cost of services and corrupt behavior among the service providers rampantly found in the urban locations, inaccessibility of proper means of communication and also economic backwardness and low literacy became the impediment to the utilization of maternal healthcare services in North-India.
Causes and risk factors during pregnancy				
1.	2018	Chaitra,R.	Knowledge, Attitude and Practice of Oral Health and Adverse Pregnancy Outcomes among Rural and Urban Pregnant Women of Moradabad, Uttar Pradesh, India.	This study revealed that the knowledge of pregnant women of rural group about association of oral health and adverse pregnancy outcome was poor. The level of education and socioeconomic status was significantly associated with oral health attitude and practice. Dental health education in pregnancy can lead to improved oral health and hence improved pregnancy outcomes.
2.	2020	Sinha,A. Et al	A study on anemia and its risk factors among pregnant women attending antenatal clinic of a rural medical college of West Bengal.	This study revealed a high prevalence of anemia in pregnancy, irrespective of age, religion, education status and Occupation. Anemia is found to be endemic in this region, due to various unfavorable socio-demographic factors. As we all know, prevention is better than cure, therefore, these findings may help our policymakers and health care providers to change.
3.	2020	Hussain,T. Et al	Prevalence, risk factors and morbidities of gestational diabetes among pregnant women attending a	Gluco-One is suitable for screening gestational diabetes using the optimal threshold capillary glucose level of 140 mg/dl. As the pregnant women find it difficult to come the next day just to collect the results, this facilitated in getting the test results promptly and appropriate consultation by

			hospital in an urban area of Bhubaneswar, Odisha	Doctor the same day.
4.	2022	Mangla,D. Et al	Risk factors of severe anemia among the pregnant women from an underprivileged rural area of northern India: a multivariate analysis.	The significant risk factors of severe anemia among pregnant women as observed in this study were having residence in a rural area without road, age < 25 years , illiteracy of mother, marriage age (<18 years in completed years), age at first pregnancy as <19 years .
5.	2023	Mogan, KA. Et al.	Clinico-epidemiological profile of women with high-risk pregnancy utilizing antenatal services in a rural primary health center in India.	The study found that the prevalence of high-risk pregnancies was 34.3% in this rural setting. The majority of high-risk pregnancies were due to hypothyroidism, followed by more than one previous LSCS or abortion. Further research is required to track high-risk pregnancy outcomes and investigate the newborn thyroid profile of women with hypothyroidism.
6.	2024	Chandra,Kiran.Et.al	A cross-sectional observational study on rural insights: maternal body Metrics, pre-pregnancy body mass index, and fetal development.	The study underscores the critical influence of maternal anthropometric measurements on neonatal outcomes, Particularly in a rural context. It highlights the need for comprehensive maternal healthcare services focusing on nutrition and education to improve fetal growth outcomes. The findings call for policy interventions and healthcare Strategies tailored to the needs of rural populations to ensure better maternal and child health.
Health related beliefs during pregnancy and lactation				
1.	2017	Singh. Et al	Non-governmental organization facilitation of a community-based nutrition and health program: Effect on program exposure and associated infant feeding practices in rural India.	Integrated nutrition and health programs seek to reduce under nutrition by educating child caregivers about infant feeding and care. Data on the quality of program implementation and consequent effects on infant feeding practices are limited. This study evaluated the effectiveness of enhancing a nutrition and health program on breastfeeding and complementary-feeding practices in rural India.
2.	2019	Bhandari,D	Barriers to exclusive breastfeeding in rural community of central Gujarat, India.	Exclusive breastfeeding rate in the studied population was detected to be 49.7%. Early marriage of parents, less educated parents, male child, Christian religion, working mother, less number of antenatal visits, operative delivery, late initiation of breastfeeding, not feeding colostrum, lack of

				knowledge about EBF, and poor counseling of mother regarding EBF were identified as barriers to EBF.
3.	2019	Chakrabarti,S .Chakrabarti, A	Food taboos in pregnancy and early lactation among women living in a rural area of West Bengal.	Taboos were present regarding consumption of various fruits (banana, papaya, jackfruit, and coconut), vegetables (brinjal, leafy vegetables), meat, fish, and eggs during pregnancy. These were followed mainly to prevent miscarriage, promote easy delivery, and prevent fetal malformations. Taboos in the lactation included avoidance of small fish, foods with multiple seeds, other "cold" foods, and fluid restriction in some areas. The taboos were followed spontaneously as the inhibitions were imposed only for a definite period.
4.	2020	Padmaja, Ravula. Et al	Assessment of nutrition related knowledge, attitudes and practices of pregnant and lactating mothers in the tribal areas of Telangana, India.	The nutrition knowledge of pregnant and lactating mothers in tribal areas of Telangana was found to be inadequate, with less than 50 percent scoring well across all respondents. The study emphasized the need for improved nutrition literacy and education, suggesting the development of innovative approaches to enhance nutrition knowledge through targeted messaging.
5.	2021	Sara,Richard s.Et al	Comparative study of knowledge, attitudes, and practices of maternal health care utilization in rural and urban areas of Mysore, India.	The knowledge gap between urban and rural women may be attributed to the prevalence of accredited social health activists (ASHAs) in rural communities. Incentivizing more urban women to become ASHAs can help close this gap between the two environments. Strategies dedicated to broadening the fund of health care education of the community will in turn improve on practice.
6.	2023	Ahuja,A .Et al	A qualitative study to understand sociocultural beliefs around perinatal and neonatal health in rural areas of Mohali, Punjab, India.	In general, women described eating varied and fairly healthy diets during Pregnancy, especially nutritious warm food, following traditional practices. Other cultural practices included restrictions on movement and mobile phone use an the use of unsafe home remedies to promote infant safety and wellbeing, such as using gripe water, applying black pencil to the baby's eyes, and feeding the baby honey.
Intervention program on pregnancy and lactation in rural areas				
1.	2021	Desai,S. Et al	Impact of health educational intervention among pregnant and lactating mothers in a rural field practice area	There is increase in level of knowledge among pregnant and lactating women regarding anemia after health education intervention and was found to be statistically significant by paired t-test.

			of Bagalkot: A non-randomized interventional trial without control.	
2.	2022	Utomo,N.K.P Et al	The Influence of Health Education on Knowledge of Antenatal Care in Pregnant Women in Rural Areas.	Knowledge of prenatal care (antenatal care) before being given health education and is in the poor category. Knowledge of prenatal care (antenatal care) after being given education health in the adequate category. There is a significant influence of education health on knowledge of pregnancy checks (antenatal care) among pregnant women in Karangpring Village, Jember Regency.
3.	2023	Sabri,S.	Impacts of antenatal nursing interventions on mothers breastfeeding self-efficacy: an experimental study.	Breastfeeding self-efficacy during pregnancy and following two months of delivery in the experimental group was significantly higher. In addition, the mother who breastfed exclusively had higher levels of postnatal self-efficacy in both experimental and control groups compared to formula feeding women.
4.	2023	Nabi,S. Et al	Knowledge, awareness and practices towards exclusive breastfeeding among lactating mothers in Kashmir, North India: a hospital based cross sectional study.	Findings showed that the practice towards exclusive breast-feeding was low. Thus, it is important to provide prenatal education to mothers and fathers on breast-feeding. We also recommend strengthening the public health education campaigns to promote breast-feeding.
5.	2023	N,Mahalakshmi.	A study to assess the effectiveness of structured teaching program on knowledge regarding antenatal services among pregnant women attending outpatient department at urban primary health center, New Delhi.	The intervention was effective in increasing the knowledge of antenatal services among Pregnant women. There was no significant association between pre-test knowledge and selected background variables education, which proved that the structured teaching program was effective independent of the background variables such as age, religion, occupation, type of family income and source of information on antenatal services.
6.	2023	Hemly,A.F. Et al	Effect of Nutritional Awareness Intervention for Pregnant Women on Maternal and Neonatal Outcomes.	Pregnant women who received nutritional awareness intervention during pregnancy had higher knowledge scores after intervention than before, better maternal and neonatal outcomes than women who did not receive it.

3.0 An overview of proposed research

3.1 Need of the study

Health is a fundamental right for every person. Good health is a topmost priority in every individual's life. We get old evidence like **"HEALTH IS WEALTH"** this line shows the importance of good health. Health is not only the fundamental need for an individual to lead to a happy life, but it is also a necessity for all productive activities in the society.

According to the **World Health Organization**, the majority of maternal deaths occur in low-resource settings, where access to quality healthcare is limited. Rural areas often face challenges related to healthcare infrastructure, skilled health workers, and transportation, which contribute to higher maternal mortality rates.

Rural pregnant and lactating women often face significant health disparities compared to their urban counterparts. These disparities may include limited access to prenatal care, nutritional resources, family planning, and health education .Rural women face several challenges during pregnancy and lactation, which impact maternal and child health outcomes. They often experience malnutrition during pregnancy and lactation, which can lead to low birth weight and stunted growth in infants. Limited access to family planning services can result in short birth intervals and unintended pregnancies reported by **Ministry of Health and Family Welfare, Government of India. (2024).** Gender inequalities can affect women's autonomy and decision-making power regarding their own health and the health of their children. Poor sanitation and hygiene practices in rural areas can lead to infections and health issues for both mothers and infants.

Pregnant and lactating women are at risk of nutrient deficiencies, including iron, calcium, folic acid and essential vitamins. These deficiencies can lead to adverse maternal health outcomes such as anemia and preeclampsia, while also affecting fetal development and the health of breastfed infants. The health of the mother during pregnancy and lactation directly influences infant health. Nutritional deficiencies and poor maternal health can lead to adverse birth outcomes. Support and education interventions can promote successful breastfeeding, leading to improved infant health and a reduced risk of maternal breast-related conditions reported by **World Health Organization, (2024).** Therefore

present study will help rural pregnant and lactating women to improve their overall maternal health and will help rural women in their upliftment.

3.2 Justification of the problem

Interventions for pregnant and lactating women are crucial, especially for those facing challenges such as low socioeconomic status and young age, as they are more vulnerable nutritionally. **(Diaz, G.A Et al 2021).** Additionally, offering lactation management education to families can enhance family support for breastfeeding mothers, ultimately improving breastfeeding outcomes**.** It is stated that the need for interventions is evident; addressing maternal health requires a multifaceted approach. Cultural, socioeconomic, and healthcare system, these factors must be considered when designing and implementing interventions .Limited access to healthcare and delays in receiving care contribute to higher maternal mortality rates in rural areas.

Systematic review conducted by **Nancy, M. (2019)** shows that effective implementation of antenatal interventions can prevent preterm delivery. It raises awareness of healthy pregnancy related practices, change the behavior and attitude, importance of antenatal and post natal care. Maternal mortality remains a grave concern, especially in rural and underserved regions.

After examining the earlier studies it is identified that Pregnant and lactating women in rural areas face unique challenges due to healthcare disparities and limited access to services. It is imperative to address these issues through targeted interventions, by focusing on the specific needs of rural mothers, we can reduce maternal mortality, improve birth outcomes, and enhance overall maternal health in rural areas. The purpose of the study is to provide an intervention program for pregnant and lactating women living in the rural areas of Agra district related to maternal health & Care. This is an effective approach for desirable changes in knowledge and practices of pregnant and lactating women which will help to improve the nutritional status of women. Thus the proposed statement of the problem is:-

"Impact of structured intervention on knowledge, awareness and practices of pregnant and lactating rural women"

3.3 Objectives of the study

1. To study the socio-economic and demographic characteristics of the selected sample.

2. To assess the knowledge, awareness and practices regarding health among pregnant and lactating women.

3. To design and execute the intervention program for selected women.

4. To create awareness and connect the rural women with policy measures and government initiatives.

5. To know the impact of intervention program on pregnant and lactating women.

3.4 Hypothesis

$H_0$1: There is no significant effect of intervention program on pregnant and lactating rural women.

H_a1: There is significant effect of intervention program on pregnant and lactating rural women.

$H_0$2: There is positive impact of the awareness created regarding policy measures and government initiatives for pregnant and lactating women.

H_a2: There is no impact of the awareness created regarding policy measures and government initiatives for pregnant and lactating women.

3.5 Operational Definition

- ✓ **Maternal Health:** Maternal health is the health of women during pregnancy, childbirth, and the postpartum period. In most cases, maternal health encompasses the health care dimensions of family planning, preconception, prenatal, and postnatal care in order to ensure a positive and fulfilling experience **WHO (2018).**
- ✓ **Pregnant Women:** Pregnant woman is an adult female who has a developing fetus in her uterus. Pregnancy begins with the fertilization of an egg by a sperm, leading to the formation of a zygote, and it typically lasts about 40 weeks. **WHO (2023)**
- ✓ **Lactating Women:** Lactating women are defined as women who have gave birth and are currently breastfeeding their infants.
- ✓ **Rural areas:** For present study, “rural areas” represent underserved and isolated geographic locations with limited access to essential services.
- ✓ **Nutritional status:** Nutritional status is the current status of women related to their dietary pattern.

3.6 Variables

3.6.1 Independent Variables

I Age

II Educational Status

III Type of Family

IV Number of Children

V Working Status of Women

VI Family Income

3.5.2 Dependent Variables

I Nutritional Knowledge

II Nutritional Awareness

III Nutritional Practices

IV Care of Infant

V Child Nutrition

3.7 Methodology

3.7.1 Research Design

The present study is a mixed method based field research. In this study researcher will explore the rural areas in which pregnant and lactating women situated, where access to quality health and information may be limited .The study aims to provide intervention to the pregnant and lactating women residing in the rural areas to improve their knowledge, awareness and practices related to their health and well-being as well as infants.

3.7.2 Locale of the study

Agra district will be selected conveniently.

3.7.3 Selection of Sample

The present study will be conducted in eight different rural areas. Steps will be used as shown in the following figure:

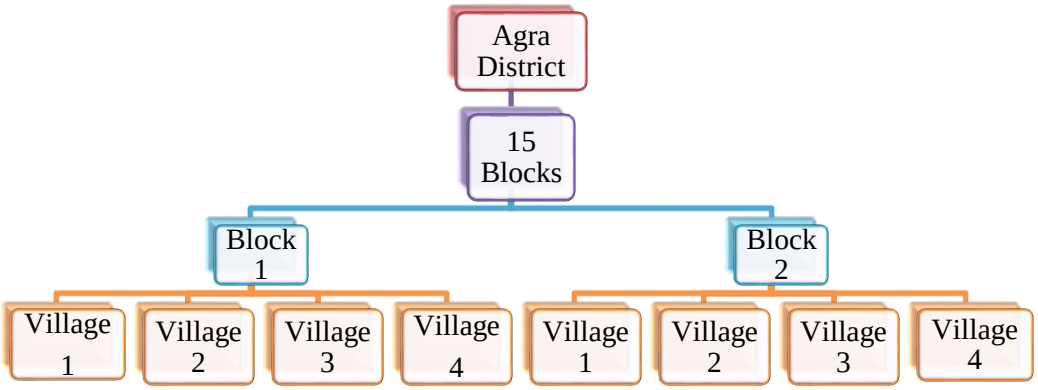

Figure 1 Criteria of Sample Selection

In Agra district, there are 15 Blocks in which two blocks are conveniently selected. For further study four villages from each block will be randomly selected.

3.7.4 Sample size

- ✓ The present study will include 300 Women.

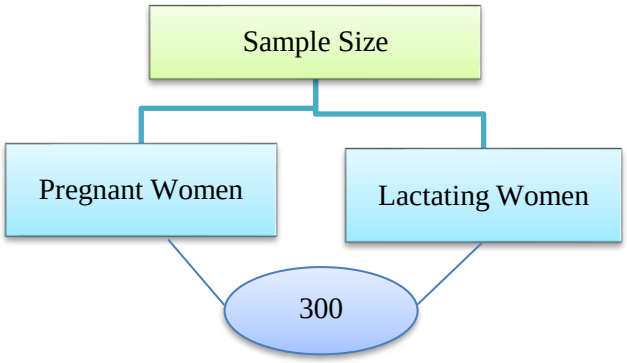

Figure 2 Sample Size

- ✓ Door to door survey method will be used to select the women.
- ✓ Women will be selected through purposive sampling technique.

3.7.5 Criteria for sample collection

- ✓ Only pregnant and lactating women will be selected for the present study.
- ✓ Women should be residing in the selected villages only.
- ✓ Only those mothers having children in the age group of 0 to 6 months will be selected for the present study.
- ✓ Women between 18-45 years of age will be selected for the present study.
- ✓ Willingness and co-operation will be prime concern of this study.

3.7.6 Tools preparation

A self-prepared interview schedule will be used for obtaining the required data. The tools of data Collections are given below.

Table 3.1 Tools for data collection

S. No.	Name of Tools	Type of Tools	Domain
1.	Assessment of socio-economic and demographic profile of sample	Self-prepared interview schedule	Age, Gender, Educational Status, Type of family, No. of children, Working status of women, Family income.
2.	Assessment of knowledge, awareness and practices of selected women ➢ Pregnancy and Postpartum Mother care ➢ Lactating/Nursing	Self-prepared interview schedule	1. Consultation during pregnancy 2. Vaccination during pregnancy 3. Food & nutritional supplements 4. Hygiene & personal care 5. Weight Gain 6. Exercise 7. Common discomforts 8. Precautions during and after delivery 1. Exclusive breastfeeding 2. Baby care and massage 3. Weaning 4. Baby hygiene 5. Immunizations 6. Sleep 7. Toy materials
3.	Assessment of knowledge and awareness regarding policy measures and government initiatives	Checklist Method	Maternal and child health care services

3.7.7 Data Collection

The data will be collected from the primary and secondary sources. The primary data will be collected through a self-prepared interview schedule for the targeted groups. Apart from this, further information will also be obtained through personal discussions and interviews with the other members involved in that area development activities. Secondary data will be obtained from various sources like books, periodicals, Newspapers, publication of Govt. as well as internet.

3.8 Procedure of the study

The methodology to be adopted for the present study would be carried in four phases.

Phase I: Exploratory phase

Phase II: Pre-intervention phase

Phase III: Intervention phase

Phase IV: Post-intervention phase

3.8.1 Phase I: Exploratory phase

In the exploratory phase subjects will be identified. Thereafter the researcher will establish rapport with selected respondents in the rural areas.

3.8.2 Phase II: Pre-intervention phase

Assessment

- Assessment of socio-economic and demographic characteristics of the sample will be done.
- Assessment of knowledge, awareness and practices of the sample will be done.
- Knowledge related to government schemes or policy measures running in that area will be assessed.

After the assessment gape areas will be identified in selected measures and a suitable intervention program will be planned and prepared.

3.8.3 Phase III: Intervention phase

It is an action orientation phase this would be an extensive long phase of 12 months. The main objectives of this phase are to educate rural pregnant and lactating women on essential aspect of maternal health. The duration of each session will be 2-3 hours depending upon the literacy and attention levels of the pregnant and lactating women.

3.8.3.1 Teaching methods

- Interactive discussions and group activities
- Demonstration method

3.8.3.2 Teaching Materials

- Audio visual aids (Charts , posters , videos)
- Dolls and props for breastfeeding and newborn care demonstrations
- Basic medical kits for first aid and demonstration

3.8.3.3 Components of intervention phase

- Knowledge, awareness and practices related to prenatal Care.

- Knowledge, awareness and practices related to postnatal Care.
- Awareness regarding policy measures and government initiatives.

3.8.3.4 Phase IV: Post Intervention Phase

Post intervention phase will be used to analyze the impact of intervention on women.

3.9 Statistical Analysis

- **Arithmetic Mean**

In general language arithmetic mean is same as the average of data. It is the sum of score divided by total number of respondents.

A.M= $\sum \boldsymbol{X}\ \boldsymbol{n}$

A.M. = Arithmetic mean, Σ X= Sum of scores, n= number of respondent

Use: To assess the responses of various factors of present study.

- **Percentage**

A percentage is a number of ratios expressed as a fraction of 100. It is denoted by using the percent sign, "%". The frequency of a particular cell will be multiply by 100 and divide by total number of respondent in that particular category to which they belong.

$P = n \times 100$ P= Percentage, n= Obtained score, N= Total or maximum score

Use: To study the distribution of the sample

- **Standard deviation**

It measures the spread of the data about the mean value. It is useful in comparing sets of data which may have the same mean but a different range. It is usually denoted by letter σ (small sigma) of Greek alphabet and is a measure of dispersion.

S.D. $=\sqrt{\sum(\boldsymbol{x}-\boldsymbol{\mu})\mathbf{2}\ \boldsymbol{n}}$ S.D. = Standard Deviation, ∑= sum of, x= value in the data set, μ= mean of data set, N= total number of observation

Use: To use in computing different statistical quantities.

- **Paired 't" Test**

The paired t-test compares the mean difference of the values to zero. It depends on the mean difference, the variability of the differences and the number of data.

Use: To assess the impact of intervention.

Any other statistical techniques will be applied as per according to data.

3.9 Delimitation of the study.

- The present study will be carried out in rural areas of Agra district.
- The present study will be limited to the age group of 18-45 years.
- Only pregnant and lactating women will be included in this Study.
- The present study will be conducted in only 2 blocks of Agra district.
- The sample size of the women will be 300 women.

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